

WHAT IS CLAIMED IS:

1. An air induction system for an engine to receive intake air, remove contaminants from the intake air, and provide the intake air for delivery to the engine, the system comprising:

5 a housing having a hollow interior with at least one entryway for receiving intake air into the housing, a contaminant separator for removing contaminants from the air, and an exit for discharge of air from the housing;

a duct positioned adjacent the exit of the housing to receive intake air therefrom for delivering the air to said engine, the duct having an inside defining an internal flow path for intake air and an outside; and

10 a seal positioned between the housing and the duct for preventing passage of air therethrough;

wherein the seal is disposed between the outside of the duct and the housing such that the seal is not exposed to air flowing in the internal flow path of the duct.

2. An air induction system as set forth in claim 1 wherein the seal is flexible and resilient.

3. An air induction system as set forth in claim 2 wherein the seal comprises an annular band clamped along opposite edges to the housing and duct.

4. An air induction system as set forth in claim 3 wherein the seal is made of silicon rubber.

5. An air induction system as set forth in claim 1 wherein the housing further comprises a nacelle and a frame at a back end of the nacelle, the frame having an opening therein comprising said exit, and wherein a front of the duct is received through the opening.

6. An air induction system as set forth in claim 5 wherein the seal extends between the outside of the duct and the opening in the frame.

7. An air induction system as set forth in claim 6 wherein the frame has a flange extending around the opening, the seal being clamped against the flange.

8. An air induction system as set forth in claim 6 wherein the duct has a rigid protrusion on its outside, the seal being clamped against the protrusion.

9. An air induction system as set forth in claim 8 wherein the protrusion comprises an L-shaped body extending in a ring around the outside of the duct.

10. An air induction system as set forth in claim 1 wherein said entryway comprises an opening formed in the housing, the contaminant separator being mounted across the entryway.

11. An air induction system as set forth in claim 10 wherein the contaminant separator comprises a barrier filter having a porous media.

12. An air induction system as set forth in claim 1 wherein the housing further comprises a nacelle and a frame on a back end of the nacelle, the nacelle being hinged to the frame for swinging movement between a closed position for engine operation and an open position for maintenance.

13. An air induction system as set forth in claim 12 further comprising a rod which secures the nacelle at the open position so that it will not inadvertently move.

14. An air induction system as set forth in claim 13 wherein the rod has a first end secured to the frame and a second end secured to the nacelle, the first end being slidably movable in a slot attached to the frame.

15. An air induction system as set forth in claim 14 wherein the rod and slot are shaped and arranged to assume a locking position when the nacelle swings to the open position.

16. An air induction system as set forth in claim 15 further comprising a spring at the second end urging the rod to lock the nacelle at the open position.

17. An air induction system for an aircraft engine to remove contaminants from intake air and deliver the air to the engine, the system comprising:

a contaminant removal assembly for receiving intake air and removing contaminants from the air, the assembly having at least one entryway for receiving intake air and an exit for discharge of the air from the assembly;

a duct configured to receive intake air from the assembly for delivery to said engine; and

a flexible and resilient seal positioned between said assembly and the duct for preventing entry of contaminated air;

wherein the seal permits relative movement between the duct and the assembly in any direction while maintaining a seal between the duct and the assembly.

18. An air induction system as set forth in claim 17 wherein the seal comprises an annular band clamped along opposite edges to the contaminant removal assembly and the duct.

19. An air induction system as set forth in claim 18 wherein the seal is made of silicon rubber.

20. An air induction system as set forth in claim 17 wherein the contaminant removal assembly further comprises a nacelle and a frame at a back end of the nacelle, the frame having an opening therein comprising said exit, and wherein a front of the duct is received through the opening.

21. An air induction system as set forth in claim 20 wherein the nacelle is hinged to the frame for swinging movement between a closed position for engine operation and an open position for maintenance.

22. An air induction system as set forth in claim 21 further comprising a rod which secures the nacelle at the open position so that it will not inadvertently move.